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=> FIL REG
FILE 'REGISTRY' ENTERED AT 15:06:40 ON 28 OCT 2010
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=> D HIS NOFILE

     FILE 'HCA' ENTERED AT 14:03:57 ON 28 OCT 2010
                E US2007-584379/APPS
L1             1 SEA SPE=ON  ABB=ON  PLU=ON  US2007-584379/AP
                E EP2003-104985/APPS
L2             1 SEA SPE=ON  ABB=ON  PLU=ON  EP2003-104985/PRN
                E WO2004-EP53182/APPS
L3             1 SEA SPE=ON  ABB=ON  PLU=ON  (WO2004-EP53182/AP OR
                WO2004-EP53182/PRN)
L4             1 SEA SPE=ON  ABB=ON  PLU=ON  (L1 OR L2 OR L3)
                SEL L4 RN

     FILE 'REGISTRY' ENTERED AT 14:05:00 ON 28 OCT 2010
L5            41 SEA SPE=ON  ABB=ON  PLU=ON  (7439-93-2/BI OR 10034-81-8/B

     FILE 'HCA' ENTERED AT 14:06:52 ON 28 OCT 2010
                SEL L4 AU
L6             6 SEA SPE=ON  ABB=ON  PLU=ON  ("BEST, ADAM SAMUEL"/AU OR
                "LANDHEER, HISKE"/AU OR "OOMS, FRANCISCUS GUENTHERUS
                BERNARDUS"/AU)
                E SHELL OIL/CO
L7         24590 SEA SPE=ON  ABB=ON  PLU=ON  ("SHELL OIL"+ALL/CO,CS,PA OR

     FILE 'REGISTRY' ENTERED AT 14:09:57 ON 28 OCT 2010
                E NC4/ES
L8       3578394 SEA SPE=ON  ABB=ON  PLU=ON  NC4/ES
L9         14138 SEA SPE=ON  ABB=ON  PLU=ON  ?PYRROLIDINIUM?/CNS
L10        13690 SEA SPE=ON  ABB=ON  PLU=ON  L8 AND L9
L11      1362715 SEA SPE=ON  ABB=ON  PLU=ON  PMS/CI
L12        13522 SEA SPE=ON  ABB=ON  PLU=ON  L10 NOT L11

     FILE 'HCA' ENTERED AT 14:13:38 ON 28 OCT 2010
L13        12667 SEA SPE=ON  ABB=ON  PLU=ON  L12
L14       298034 SEA SPE=ON  ABB=ON  PLU=ON  (BATTERY OR BATTERIES OR
                (ELECTROCHEM? OR ELECTROLY? OR GALVANI? OR WET OR DRY OR
                PRIMARY OR SECONDARY)(2A)(CELL OR CELLS) OR WETCELL? OR
                DRYCELL?)/BI,AB
L15       302987 SEA SPE=ON  ABB=ON  PLU=ON  ANOD#### OR NEG? (2A)
                ELECTROD####
L16       311355 SEA SPE=ON  ABB=ON  PLU=ON  CATHOD#### OR POS? (2A)
                ELECTROD####
L17        50799 SEA SPE=ON  ABB=ON  PLU=ON  ION### (2A) (LIQ# OR LIQUID?
                OR FLUID?)
L18        79067 SEA SPE=ON  ABB=ON  PLU=ON  L14 AND L15
L19        50076 SEA SPE=ON  ABB=ON  PLU=ON  L18 AND L16
L20          284 SEA SPE=ON  ABB=ON  PLU=ON  L19 AND L17
L21           37 SEA SPE=ON  ABB=ON  PLU=ON  L20 AND L13
L22       114442 SEA SPE=ON  ABB=ON  PLU=ON  L14 AND (L15 OR L16)
L23          470 SEA SPE=ON  ABB=ON  PLU=ON  L22 AND L17
L24           68 SEA SPE=ON  ABB=ON  PLU=ON  L23 AND L13
L25       557228 SEA SPE=ON  ABB=ON  PLU=ON  ELECTROLY?
L26           35 SEA SPE=ON  ABB=ON  PLU=ON  L21 AND L25
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L27          62 SEA SPE=ON  ABB=ON  PLU=ON  L24 AND L25

     FILE 'REGISTRY' ENTERED AT 14:21:32 ON 28 OCT 2010
                E C H F3 O3 S . LI/MF
L28           1 SEA SPE=ON  ABB=ON  PLU=ON  "C H F3 O3 S . LI"/MF
L29        3338 SEA SPE=ON  ABB=ON  PLU=ON  CHF3O3S
L30       77705 SEA SPE=ON  ABB=ON  PLU=ON  F6P
L31         101 SEA SPE=ON  ABB=ON  PLU=ON  C4BO8
L32         187 SEA SPE=ON  ABB=ON  PLU=ON  C4F9O6S3
L33       16041 SEA SPE=ON  ABB=ON  PLU=ON  CLHO4
L34         107 SEA SPE=ON  ABB=ON  PLU=ON  C2H7NO4S2
L35        2654 SEA SPE=ON  ABB=ON  PLU=ON  ASF6
L36          42 SEA SPE=ON  ABB=ON  PLU=ON  C4HF10NO4S2
L37         360 SEA SPE=ON  ABB=ON  PLU=ON  C2HF6NO4S2
L38          19 SEA SPE=ON  ABB=ON  PLU=ON  C2HF6N
L39       72229 SEA SPE=ON  ABB=ON  PLU=ON  BF4
L40      172608 SEA SPE=ON  ABB=ON  PLU=ON  (L28 OR L29 OR L30 OR L31 OR
                L32 OR L33 OR L34 OR L35 OR L36 OR L37 OR L38 OR L39)

     FILE 'HCA' ENTERED AT 14:31:43 ON 28 OCT 2010
L41      178507 SEA SPE=ON  ABB=ON  PLU=ON  L40
L42          25 SEA SPE=ON  ABB=ON  PLU=ON  L26 AND L41
L43          35 SEA SPE=ON  ABB=ON  PLU=ON  L42 OR L26
L44          48 SEA SPE=ON  ABB=ON  PLU=ON  L27 AND L41
L45          62 SEA SPE=ON  ABB=ON  PLU=ON  L44 OR L27

     FILE 'REGISTRY' ENTERED AT 14:37:44 ON 28 OCT 2010
                E CL H O4 . 1/2 MG/MF
                E CR LI O4 TI/MF
L46           1 SEA SPE=ON  ABB=ON  PLU=ON  "CR LI O4 TI"/MF
                E S2 TI/MF
L47          15 SEA SPE=ON  ABB=ON  PLU=ON  "S2 TI"/MF
L48        1559 SEA SPE=ON  ABB=ON  PLU=ON  (LI (L) FE (L) P (L) O)/ELS
L49        1092 SEA SPE=ON  ABB=ON  PLU=ON  L48 AND O4P
L50        1108 SEA SPE=ON  ABB=ON  PLU=ON  L46 OR L47 OR L49

     FILE 'HCA' ENTERED AT 14:44:38 ON 28 OCT 2010
L51        2371 SEA SPE=ON  ABB=ON  PLU=ON  L50
L52           1 SEA SPE=ON  ABB=ON  PLU=ON  L43 AND L51
L53          35 SEA SPE=ON  ABB=ON  PLU=ON  L52 OR L43
L54           1 SEA SPE=ON  ABB=ON  PLU=ON  L45 AND L51
L55          62 SEA SPE=ON  ABB=ON  PLU=ON  L54 OR L45

     FILE 'REGISTRY' ENTERED AT 14:45:29 ON 28 OCT 2010
L56        7099 SEA SPE=ON  ABB=ON  PLU=ON  (LI (L) TI (L) O)/ELS
L57         319 SEA SPE=ON  ABB=ON  PLU=ON  L56 AND 3/ELC.SUB
L58          60 SEA SPE=ON  ABB=ON  PLU=ON  L56 AND CR/ELS AND 4/ELC.SUB
L59          80 SEA SPE=ON  ABB=ON  PLU=ON  L56 AND MG/ELS AND 4/ELC.SUB
L60       11945 SEA SPE=ON  ABB=ON  PLU=ON  (LI (L) MN (L) O)/ELS
L61         960 SEA SPE=ON  ABB=ON  PLU=ON  L60 AND 3/ELC.SUB
L62          16 SEA SPE=ON  ABB=ON  PLU=ON  L61 AND 5/MN
L63           9 SEA SPE=ON  ABB=ON  PLU=ON  L62 AND 12/O
L64         208 SEA SPE=ON  ABB=ON  PLU=ON  L60 AND MG/ELS AND 4/ELC.SUB
L65           2 SEA SPE=ON  ABB=ON  PLU=ON  L64 AND 5/MN
L66           1 SEA SPE=ON  ABB=ON  PLU=ON  L65 AND 12/O

     FILE 'HCA' ENTERED AT 14:57:06 ON 28 OCT 2010
L67        2867 SEA SPE=ON  ABB=ON  PLU=ON  L57
L68          70 SEA SPE=ON  ABB=ON  PLU=ON  L58
L69          68 SEA SPE=ON  ABB=ON  PLU=ON  L59
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L70          680 SEA SPE=ON  ABB=ON  PLU=ON  L49
L71          223 SEA SPE=ON  ABB=ON  PLU=ON  L63
L72            1 SEA SPE=ON  ABB=ON  PLU=ON  L66
L73         2939 SEA SPE=ON  ABB=ON  PLU=ON  L67 OR L68 OR L69
L74           33 SEA SPE=ON  ABB=ON  PLU=ON  L70 AND (L69 OR L67)
L75           27 SEA SPE=ON  ABB=ON  PLU=ON  (L71 OR L72) AND (L69 OR
                 L67)
L76            4 SEA SPE=ON  ABB=ON  PLU=ON  L53 AND L73
L77            1 SEA SPE=ON  ABB=ON  PLU=ON  L53 AND L74
L78            1 SEA SPE=ON  ABB=ON  PLU=ON  L53 AND L75
L79           35 SEA SPE=ON  ABB=ON  PLU=ON  (L76 OR L77 OR L78) OR L53
L80            4 SEA SPE=ON  ABB=ON  PLU=ON  L55 AND L73
L81            1 SEA SPE=ON  ABB=ON  PLU=ON  L55 AND L74
L82            1 SEA SPE=ON  ABB=ON  PLU=ON  L55 AND L75
L83           62 SEA SPE=ON  ABB=ON  PLU=ON  (L80 OR L81 OR L82) OR L55
L84           62 SEA SPE=ON  ABB=ON  PLU=ON  L79 OR L83
L85            2 SEA SPE=ON  ABB=ON  PLU=ON  L84 AND (L6 OR L7)
L86           60 SEA SPE=ON  ABB=ON  PLU=ON  L84 NOT L85
L87            4 SEA SPE=ON  ABB=ON  PLU=ON  1802-2004/PY,PRY,AY AND L86
L88           56 SEA SPE=ON  ABB=ON  PLU=ON  L86 NOT L87
                 SAV L88 WEI379/A


=> FIL HCA
FILE 'HCA' ENTERED AT 15:06:49 ON 28 OCT 2010
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=> D L85 1-2 IBIB ABS HITSTR HITIND RETABLE

L85  ANSWER 1 OF 2  HCA  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:        150:125209  HCA  Full-text
TITLE:                   Lithium energy storage device
INVENTOR(S):             Best, Adam Samuel; Hollenkamp, Anthony
                         Frank; Bhatt, Anand Indravadan
PATENT ASSIGNEE(S):      Commonwealth Scientific and Industrial Research
                         Organisation, Australia
SOURCE:                  PCT Int. Appl., 51pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
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     WO 2009003224        A1    20090108    WO 2008-AU950
                                                                   200806
                                                                   27
          W:  AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY,
              BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE,
              EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN,
              IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT,
              LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
              NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK,
              SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
              VN, ZA, ZM, ZW
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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

AU 2008271909	A1	20090108	AU 2008-271909		200806 27
CA 2691846	A1	20090108	CA 2008-2691846		200806 27
EP 2162942	A1	20100317	EP 2008-757027		200806 27

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, AL, BA, MK, RS

KR 2010038400	A	20100414	KR 2010-7001801		200806 27
JP 2010532071	T	20100930	JP 2010-513581		200806 27
CN 101821892	A	20100901	CN 2008-80104536		201002 26
US 20100178555	A1	20100715	US 2010-667174		201003 01
PRIORITY APPLN. INFO.:			AU 2007-903507	A	200706 29
			WO 2008-AU950	W	200806 27

AB A lithium energy storage device consists of at least one pos . electrode, at least one neg. electrode , and an ionic liquid electrolyte comprising bis(fluorosulfonyl)imide (FSI) as the anion and a cation counterion, and lithium ions at a level of >0.3 mol/kg of ionic liquid, and ≤1.5 mol/kg of ionic liquid The lithium energy storage device can include an FSI ionic liquid electrolyte and LiBF4 or LiPF6 as the lithium salt. The pos. electrode is a lithium metal phosphate, in which the metal is a lst-row transition metal, or a doped derivate thereof. Preferably, the pos. electrode is FeLiPO4.

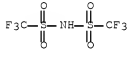
IT 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate (LiPF6) 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide 852620-97-4, 1-Methyl-1-propylpyrrolidinium bis(fluorosulfonyl)imide (electrolyte; lithium energy storage device)

RN 14283-07-9 HCA

CN Borate(1-), tetrafluoro-, lithium (1:1) (CA INDEX NAME)

RN 21324-40-3 HCA
CN Phosphate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)

RN 90076-65-6 HCA
CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt (1:1) (CA INDEX NAME)



RN 852620-97-4 HCA
CN Pyrrolidinium, 1-methyl-1-propyl-, salt with imidodisulfuryl fluoride (1:1) (CA INDEX NAME)

CM 1

CRN 108259-90-1
CMF C8 H18 N

CM 2

CRN 44821-49-0
CMF F2 N O4 S2

IPCI H01M0010-26 [I,A]; H01M0010-24 [I,A]; H01M0010-36 [I,A]; H01M0010-40 [I,A]
IPCR H01M0010-24 [I,C]; H01M0010-26 [I,A]; H01M0004-58 [I,C*]; H01M0004-58 [I,A]; H01M0010-24 [I,A]; H01M0010-36 [I,C*]; H01M0010-36 [I,A]
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium battery ionic liq electrolyte metal phosphate cathode
IT Ionic liquids
(lithium energy storage device)
IT Secondary batteries
(lithium; lithium energy storage device)
IT 15365-14-7, Iron lithium phosphate felipo4
(cathode material; lithium energy storage device)
IT 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate (LiPF6) 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide 174899-83-3 235789-75-0, 1-Ethyl-3-methylimidazolium bis(fluorosulfonyl)imide 852620-97-4, 1-Methyl-1-propylpyrrolidinium bis(fluorosulfonyl)imide
(electrolyte; lithium energy storage device)
RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	File
Dai-Ichi Kogyo Seiyaku	2007			WO 2007088677 A1	HCA
Herr, R	1995			US 5389467 A	HCA
Mie, K	2004			US 20040106047 A1	HCA

L85 ANSWER 2 OF 2 HCA COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 143:118081 HCA Full-text
TITLE: Electrochemical element for use at high temperatures
INVENTOR(S): Best, Adam Samuel; Landheer, Hiske; Ooms, Franciscus Guentherus Bernardus
PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij B.V., Neth.; Shell Canada Limited
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005064733	A1	20050714	WO 2004-EP53182	200411 30
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004309904	A1	20050714	AU 2004-309904	200411 30
AU 2004309904	B2	20080403		
CA 2552230	A1	20050714	CA 2004-2552230	200411 30
GB 2424751	A	20061004	GB 2006-12515	200411 30
GB 2424751	B	20070606		
CN 1906795	A	20070131	CN 2004-80040707	200411 30
CN 100468856	C	20090311		
BR 2004018225	A	20070427	BR 2004-18225	200411 30
JP 2007517364	T	20070628	JP 2006-546146	200411 30
KR 2007001118	A	20070103	KR 2006-7015528	200607 31
US 20070254213	A1	20071101	US 2007-584379	200704 11
PRIORITY APPLN. INFO.:			EP 2003-104985 A	200312 29
			WO 2004-EP53182 W	200411 30

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An electrochem. element for use at a high temperature has an anode , a cathode comprising an intercalation material having an upper reversible-potential-limit of at most 4 V vs. Li/Li+ as active material, and an electrolyte arranged between the cathode and anode, which electrolyte comprises an ionic liquid with an anion and a cation comprising a pyrrolidinium ring structure

having four C atoms and one N atom. Expts. revealed that rechargeable batteries comprising such an intercalation material and N-R1-N-R2-pyrrolidinium, wherein R1 and R2 are alkyl groups and R1 may be Me and R2 may be Bu or hexyl, are particularly suitable for use at a temperature of up to about 150° and may be used in oil and/or gas production wells.

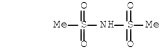
IT 371-77-7D, compound 5347-82-0D, compound 7791-03-9, Lithium perchlorate 10034-81-8, Magnesium perchlorate 12017-97-9, Chromium lithium titanium oxide (CrLiTiO4) 12031-92-4, Lithium manganese oxide (Li4Mn5O12) 12031-95-7, Lithium titanium oxide (Li4Ti5O12) 12039-13-3, Titanium sulfide (TiS2) 14283-07-9, Lithium tetrafluoroborate 14874-70-5D, Tetrafluoroborate, compound 16919-18-9D, Hexafluorophosphate, compound 16973-45-8D, Hexafluoroarsenate, compound 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 37217-08-6, Lithium titanium oxide (LiTi2O4) 55526-39-1D, Pyrrolidinium, compound 82113-65-3D, compound 90076-65-6 125579-65-9D, compound 130447-45-9D, compound 132404-42-3 152894-10-5D, compound 180964-63-8, Lithium magnesium titanium oxide 223437-10-3D, 1-Butyl-1-methylPyrrolidinium, compound 244761-29-3, Lithium bis(oxalato)borate 330671-30-2D, compound 857631-30-2, Lithium magnesium titanium oxide (Li3-4Mg0-1Ti5O12) 857631-31-3, Lithium magnesium manganese oxide (Li3-4Mg0-1Mn5O12) 857631-32-4, Iron lithium magnesium phosphate (FeLi0.98-1Mg0-0.02(PO4)) 857631-33-5, Iron lithium niobium phosphate (FeLi0.98-1Nb0-0.02(PO4)) 857631-34-6, Iron lithium zirconium phosphate (FeLi0.98-1Zr0-0.02(PO4)) 857631-35-7, Iron lithium titanium phosphate (FeLi0.98-1Ti0-0.02(PO4)) 857631-36-8, Aluminum iron lithium phosphate (Al0-0.02FeLi0.98-1(PO4))
(electrochem. element for use at high temps.)

RN 371-77-7 HCA

CN Methanamine, 1,1,1-trifluoro-N-(trifluoromethyl)- (CA INDEX NAME)

RN 5347-82-0 HCA

CN Methanesulfonamide, N-(methylsulfonyl)- (CA INDEX NAME)



RN 7791-03-9 HCA

CN Perchloric acid, lithium salt (1:1) (CA INDEX NAME)

RN 10034-81-8 HCA
CN Perchloric acid, magnesium salt (2:1) (CA INDEX NAME)

RN 12017-97-9 HCA
CN Chromium lithium titanium oxide (CrLiTiO4) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Cr	1	7440-47-3
Ti	1	7440-32-6
Li	1	7439-93-2

RN 12031-92-4 HCA
CN Lithium manganese oxide (Li4Mn5O12) (CA INDEX NAME)

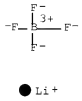
Component	Ratio	Component Registry Number
O	12	17778-80-2
Mn	5	7439-96-5
Li	4	7439-93-2

RN 12031-95-7 HCA
CN Lithium titanium oxide (Li4Ti5O12) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Ti	5	7440-32-6
Li	4	7439-93-2

RN 12039-13-3 HCA
CN Titanium sulfide (TiS2) (CA INDEX NAME)

RN 14283-07-9 HCA
CN Borate(1-), tetrafluoro-, lithium (1:1) (CA INDEX NAME)

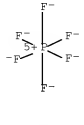


RN 14874-70-5 HCA
CN Borate(1-), tetrafluoro- (CA INDEX NAME)

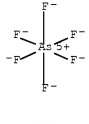
RN 16919-18-9 HCA
CN Phosphate(1-), hexafluoro- (CA INDEX NAME)

RN 16973-45-8 HCA
CN Arsenate(1-), hexafluoro- (CA INDEX NAME)

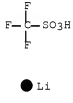
RN 21324-40-3 HCA
CN Phosphate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)



RN 29935-35-1 HCA
CN Arsenate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)



RN 33454-82-9 HCA
CN Methanesulfonic acid, 1,1,1-trifluoro-, lithium salt (1:1) (CA INDEX NAME)

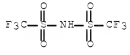


RN 37217-08-6 HCA
CN Lithium titanium oxide (LiTi2O4) (CA INDEX NAME)

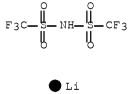
Component	Ratio	Component Registry Number
O	4	17778-80-2
Ti	2	7440-32-6
Li	1	7439-93-2

RN 55526-39-1 HCA
CN Pyrrolidine, conjugate acid (1:1) (CA INDEX NAME)

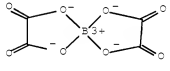
RN 82113-65-3 HCA
CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-
(CA INDEX NAME)



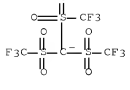
RN 90076-65-6 HCA
CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-,
lithium salt (1:1) (CA INDEX NAME)



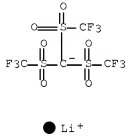
RN 125579-65-9 HCA
CN Borate(1-), bis[ethanedioato(2-)-κO1,κO2]-, (T-4)- (9CI)
(CA INDEX NAME)



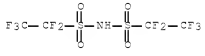
RN 130447-45-9 HCA
CN Methane, tris[(trifluoromethyl)sulfonyl]-, ion(1-) (CA INDEX NAME)



RN 132404-42-3 HCA
CN Methane, tris[(trifluoromethyl)sulfonyl]-, ion(1-), lithium (1:1)
(CA INDEX NAME)



RN 152894-10-5 HCA
CN Ethanesulfonamide, 1,1,2,2,2-pentafluoro-N-[(1,1,2,2,2-pentafluoroethyl)sulfonyl]- (CA INDEX NAME)

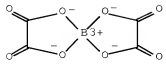


RN 180984-63-8 HCA
CN Lithium magnesium titanium oxide (CA INDEX NAME)

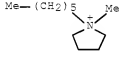
Component	Ratio	Component Registry Number
O	x	17778-80-2
Ti	x	7440-32-6
Mg	x	7439-95-4
Li	x	7439-93-2

RN 223437-10-3 HCA
CN Pyrrolidinium, 1-butyl-1-methyl- (CA INDEX NAME)

RN 244761-29-3 HCA
CN Borate(1-), bis[ethanedioato(2-)-κO1,κO2]-, lithium (1:1), (T-4)- (CA INDEX NAME)



RN 330671-30-2 HCA
CN Pyrrolidinium, 1-hexyl-1-methyl- (CA INDEX NAME)



RN 857631-30-2 HCA
CN Lithium magnesium titanium oxide (Li3-4Mg0-1Ti5O12) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Ti	5	7440-32-6
Mg	0 - 1	7439-95-4
Li	3 - 4	7439-93-2

RN 857631-31-3 HCA
CN Lithium magnesium manganese oxide (Li3-4Mg0-1Mn5O12) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	12	17778-80-2
Mn	5	7439-96-5
Mg	0 - 1	7439-95-4
Li	3 - 4	7439-93-2

RN 857631-32-4 HCA
CN Iron lithium magnesium phosphate (FeLi0.98-1Mg0-0.02(PO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Mg	0 - 0.02	7439-95-4
Li	0.98 - 1	7439-93-2
Fe	1	7439-89-6

RN 857631-33-5 HCA
CN Iron lithium niobium phosphate (FeLi0.98-1Nb0-0.02(PO4)) (CA INDEX

NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Nb	0 - 0.02	7440-03-1
Li	0.98 - 1	7439-93-2
Fe	1	7439-89-6

RN 857631-34-6 HCA
CN Iron lithium zirconium phosphate (FeLi0.98-1Zr0-0.02(PO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Zr	0 - 0.02	7440-67-7
Li	0.98 - 1	7439-93-2
Fe	1	7439-89-6

RN 857631-35-7 HCA
CN Iron lithium titanium phosphate (FeLi0.98-1Ti0-0.02(PO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Ti	0 - 0.02	7440-32-6
Li	0.98 - 1	7439-93-2
Fe	1	7439-89-6

RN 857631-36-8 HCA
CN Aluminum iron lithium phosphate (Al0-0.02FeLi0.98-1(PO4)) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Li	0.98 - 1	7439-93-2
Fe	1	7439-89-6
Al	0 - 0.02	7429-90-5

IPCI H01M0010-40 [ICM,7]; H01M0010-39 [ICS,7]; H01M0010-36 [ICS,7]; H01M0006-14 [ICS,7]; H01M0006-16 [ICS,7]; H01G0009-02 [ICS,7]
IPCR H01G0009-02 [I,C*]; H01G0009-02 [I,A]; H01G0009-022 [I,C*]; H01G0009-022 [I,A]; H01M0004-48 [N,C*]; H01M0004-48 [N,A]; H01M0004-58 [N,C*]; H01M0004-58 [N,A]; H01M0006-14 [I,C*]; H01M0006-14 [I,A]; H01M0006-16 [I,C*]; H01M0006-16 [I,A]; H01M0010-36 [I,C*]; H01M0010-36 [I,A]; H01M0010-39 [I,A]
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 51, 72, 76
ST battery high temp use oil gas well
IT Electrolytic capacitors
Geothermal wells
Ionic liquids
Natural gas wells

Oil wells
Primary batteries
Secondary batteries
(electrochem. element for use at high temps.)
IT 371-77-7D, compound 1314-62-1, Vanadium oxide (V2O5), uses 5347-82-0D, compound 7439-93-2, Lithium, uses 7439-93-2D, Lithium, salt 7791-03-9, Lithium perchlorate 10034-81-8, Magnesium perchlorate 12017-97-9, Chromium lithium titanium oxide (CrLiTiO4) 12031-92-4, Lithium manganese oxide (Li4Mn5O12) 12031-95-7, Lithium titanium oxide (Li4Ti5O12) 12039-13-3, Titanium sulfide (TiS2) 16283-07-9, Lithium tetrafluoroborate 14797-73-0D, Perchlorate, compound 14874-70-5D, Tetrafluoroborate, compound 16919-18-9D, Hexafluorophosphate, compound 16973-45-8D, Hexafluoroarsenate, compound 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 37181-39-8D, Triflate, compound 37217-08-6, Lithium titanium oxide (LiTi2O4) 55526-39-1D, Pyrrolidinium, compound 82113-65-3D, compound 90076-65-6 125579-65-9D, compound 130447-45-9D, compound 132404-42-3 152894-10-5D, compound 175786-46-6, Lithium magnesium manganese oxide 180984-63-8, Lithium magnesium titanium oxide 223437-10-3D, 1-Butyl-1-methylPyrrolidinium, compound 244761-29-3, Lithium bis(oxalato)borate 330671-30-2D, compound 857631-30-2, Lithium magnesium titanium oxide (Li3-4Mg0-1Ti5O12) 857631-31-3, Lithium magnesium manganese oxide (Li3-4Mg0-1Mn5O12) 857631-32-4, Iron lithium magnesium phosphate (FeLi0.98-1Mg0-0.02(PO4)) 857631-33-5, Iron lithium niobium phosphate (FeLi0.98-1Nb0-0.02(PO4)) 857631-34-6, Iron lithium zirconium phosphate (FeLi0.98-1Zr0-0.02(PO4)) 857631-35-7, Iron lithium titanium phosphate (FeLi0.98-1Ti0-0.02(PO4)) 857631-36-8, Aluminum iron lithium phosphate (Al0-0.02FeLi0.98-1(PO4))
(electrochem. element for use at high temps.)
RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	File
Macfarlane, D	2001			WO 0115258 A	HCA
Macfarlane, D	1999		4164	JOURNAL OF PHYSICAL	HCA
Michot, C	2002			US 2002055045 A1	HCA

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

=> D L87 1-4 IBIB ABS HITSTR HITIND RETABLE

L87 ANSWER 1 OF 4 HCA COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 145:317982 HCA Full-text
TITLE: Nonaqueous ~~electrolyte~~ secondary ~~battery~~
INVENTOR(S): Ohzuku, Tsutomu; Yoshizawa, Hiroshi; Nakura, Kensuke
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan; Osaka City University

SOURCE: U.S. Pat. Appl. Publ., 30 pp., Cont.-in-part of U.S. Ser. No. 979,764.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060204847	A1	20060914	US 2006-430994	200605 10
			<--	
JP 2005142047	A	20050602	JP 2003-377954	200311 07
			<--	
JP 4554911	B2	20100929		
US 20050147889	A1	20050707	US 2004-979764	200411 03
			<--	
US 7722989	B2	20100525		
KR 2006113872	A	20061103	KR 2006-100852	200610 17
			<--	
KR 899504	B1	20090526		
PRIORITY APPLN. INFO.:			JP 2003-377954 A	200311 07
			<--	
			US 2004-979764 A2	200411 03
			<--	
			KR 2004-89762 A3	200411 05
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB As an alternative technique to lead-acid batteries, the present invention provides an inexpensive 2 V nonaq. electrolyte secondary battery having excellent cycle life at a high rate by preventing volume change during charge and discharge. The nonaq. electrolyte secondary battery uses: a pos. electrode active material having a layered structure, being represented by chemical formula Li1+α[Me]O2, where 0≤α<0.2, and Me is a transition metal including Ni and at least one selected from the group consisting of Mn, Fe, Co, Ti and Cu, and including elemental nickel and elemental cobalt in substantially the same ratio; and a neg. electrode active material including Li4Ti5O12.

IT 12031-95-7, Lithium titanium oxide (Li4Ti5O12)
14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate
(nonaq. electrolyte secondary battery)

RN 12031-95-7 HCA

CN Lithium titanium oxide (Li4Ti5O12) (CA INDEX NAME)

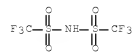
Component	Ratio	Component Registry Number
O	12	17778-80-2
Ti	5	7440-32-6
Li	4	7439-93-2

RN 14283-07-9 HCA
CN Borate(1-), tetrafluoro-, lithium (1:1) (CA INDEX NAME)

RN 21324-40-3 HCA
CN Phosphate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)

IT 55526-39-1, Pyrrolidinium 82113-65-3
(nonaq. electrolyte secondary battery)
RN 55526-39-1 HCA
CN Pyrrolidine, conjugate acid (1:1) (CA INDEX NAME)

RN 82113-65-3 HCA
CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-
(CA INDEX NAME)



INCL 429223000; 429231100; 429221000; 429231300; 429220000; 429231500; 429224000; 429339000; 429337000; 429338000; 429340000; 429200000; 429342000; 429341000
IPCI H01M0004-52 [I,A]; H01M0004-50 [I,A]; H01M0010-40 [I,A]; H01M0010-36 [I,C*]
IPCR H01M0004-52 [I,C]; H01M0004-52 [I,A]; H01M0004-66 [I,C*]; H01M0004-66 [I,A]; H01M0002-16 [I,C*]; H01M0002-16 [I,A]; H01M0004-02 [I,C*]; H01M0004-02 [I,A]; H01M0004-48 [I,C*]; H01M0004-48 [I,A]; H01M0004-50 [I,C]; H01M0004-50 [I,A]; H01M0004-58 [I,C*]; H01M0004-58 [I,A]; H01M0010-36 [I,C]; H01M0010-38 [I,C]; H01M0010-38 [I,A]; H01M0010-40 [I,A]
NCL 429/223.000; 429/200.000; 429/220.000; 429/221.000; 429/224.000; 429/231.100; 429/231.300; 429/231.500; 429/337.000; 429/338.000; 429/339.000; 429/340.000; 429/341.000; 429/342.000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 49
ST nonaq electrolyte secondary battery
IT Polyamide fibers
(aramid; nonaq. electrolyte secondary battery)
IT Battery cathodes
Ionic liquids
Nonwoven fabrics
Secondary batteries
Secondary battery separators
(nonaq. electrolyte secondary battery)
IT Polyamide fibers
Polyesters
Vinal fibers
(nonaq. electrolyte secondary battery)
IT Amides
(nonaq. electrolyte secondary battery)
IT Halides
(nonaq. electrolyte secondary battery)
IT Imides
(nonaq. electrolyte secondary battery)
IT Sulfonic acids
(salts; nonaq. electrolyte secondary battery)
IT Aluminum alloy, base
(nonaq. electrolyte secondary battery)
IT 75-05-8, Acetonitrile, uses 78-40-0, Triethyl phosphate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 96-49-1D, Ethylene carbonate, fluorinated 108-29-2, γ-Valerolactone 108-32-7, Propylene carbonate 111-96-6, Methyldiglyme 126-33-0, Sulfolane 512-56-1, Trimethyl phosphate 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses 9002-88-4, Polyethylene 9003-07-0, Polypropylene 12031-95-7, Lithium titanium oxide (Li4Ti5O12) 13463-67-7, Titanium oxide, uses 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24968-12-5, Polybutylene terephthalate 25038-59-9, uses 35466-86-5 131344-56-4, Cobalt lithium nickel

oxide 909034-11-3, Cobalt lithium nickel oxide (Co0.5Li0.9-1.1Ni0.5O2) 909034-12-4, Cobalt lithium nickel oxide (Co0.33Li0.9-1.1Ni0.33O2)
(nonaq. electrolyte secondary battery)
IT 74-84-0, Ethane, uses 3398-75-2, Decanoate 11129-12-7, Borate 14265-44-2, Phosphate, uses 14798-03-9, Ammonium, uses 14808-79-8, Sulfate, uses 16749-13-6, Phosphonium 16969-45-2, Pyridinium 17009-90-4, Imidazolium 20064-29-3, Trimethylpropylammonium 25215-10-5, Guanidinium 37264-96-3, Cobalt carbonyl 39349-74-1, Antimonate 55526-39-1, Pyrrolidinium 65039-03-4, 1-Ethyl-3-methylimidazolium 82113-65-3
(nonaq. electrolyte secondary battery)
OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

L87 ANSWER 2 OF 4 HCA COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 140:382217 HCA Full-text
TITLE: Investigation of ionic liquids as electrolytes for carbon nanotube electrodes
AUTHOR(S): Barisci, J. N.; Wallace, G. G.; MacFarlane, D. R.; Baughman, R. H.
CORPORATE SOURCE: Department of Chemistry, University of Wollongong, Wollongong, 2522, Australia
SOURCE: Electrochemistry Communications (2004), 6(1), 22-27
CODEN: ECCMF9; ISSN: 1388-2481
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The use of ionic liqs. (IL) as electrolytes for electrochem. applications involving carbon nanotube (CNT) electrodes has been investigated in a brief initial study. The use of IL electrolytes in conjunction with CNT electrodes has proved possible and advantageous. Ionic liqs. provide relatively high conductivity, wide potential window (up to 5.5 V) along with chemical stability and nonvolatile nature. While some decrease in the electrode capacitance and charging rate are observed in IL with respect to conventional electrolytes, the magnitude of the decrease is not substantial. The general well defined electrochem. behavior of CNT electrodes in IL, coupled to the wide potential window and other advantages of these electrolytes, suggest new avenues for the design of capacitors, batteries and electromech. actuators.
IT 3109-63-5, Tetrabutylammonium hexafluorophosphate 174501-64-5 223437-05-6
(electrolytes for carbon nanotube electrodes)
RN 3109-63-5 HCA
CN 1-Butanaminium, N,N,N-tributyl-, hexafluorophosphate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 16919-18-9
CMF F6 P
CCI CCS

CM 2

CRN 10549-76-5
CMF C16 H36 N

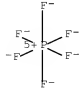
RN 174501-64-5 HCA
CN 1H-Imidazolium, 3-butyl-1-methyl-, hexafluorophosphate(1-) (1:1)
(CA INDEX NAME)

CM 1

CRN 80432-08-2
CMF C8 H15 N2

CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



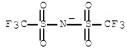
RN 223437-05-6 HCA
CN Pyrrolidinium, 1-methyl-1-propyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (CA INDEX NAME)

CM 1

CRN 108259-90-1
CMF C8 H18 N

CM 2

CRN 98837-98-0
CMF C2 F6 N O4 S2



IT 16919-18-9, Hexafluorophosphate
(ionic liquid containing; ionic liqs. as electrolytes for carbon nanotube electrodes)
RN 16919-18-9 HCA
CN Phosphate(1-), hexafluoro- (CA INDEX NAME)

CC 72-2 (Electrochemistry)
ST carbon nanotube electrode ionic liq electrolyte; cond potential window chem stability electrolyte electrode
IT Ionic liquids
(as electrolytes for carbon nanotube electrodes)
IT Nanotubes
(carbon; ionic liqs. as electrolytes for carbon nanotube electrodes)

IT Stability
(chemical stability; of electrolytes for carbon nanotube electrodes)
IT Electrodes
Electrolytes
(ionic liqs. as electrolytes for carbon nanotube electrodes)
IT Cyclic voltammetry
Electric capacitance-potential relationship
Electric impedance
(of carbon nanotubes in ionic liquid)
IT Electric conductivity
(of electrolytes for carbon nanotube electrodes)
IT Electric potential
(potential window; of electrolytes for carbon nanotube electrodes)
IT 3109-63-5, Tetrabutylammonium hexafluorophosphate 174501-64-5 174899-82-2 223437-05-6 370865-89-7, 1-Ethyl-3-methylimidazolium dicyanamide
(electrolytes for carbon nanotube electrodes)
IT 123-75-1D, Pyrrolidine, derivs. 288-32-4D, Imidazole, derivs. 16722-51-3, p-Toluenesulfonate, uses 16919-18-9, Hexafluorophosphate 17997-40-9 98837-98-0
(ionic liquid containing; ionic liqs. as electrolytes for carbon nanotube electrodes)
IT 7440-44-0, Carbon, uses
(nanotubes; ionic liqs. as electrolytes for carbon nanotube electrodes)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	File
An, K	2001	13	497	Adv Mat	HCA
Barisci, J	2000	6	509	Electrochim Acta	
Barisci, J	2000	488	92	J Electroanal Chem	HCA
Barisci, J	2000	147	4580	J Electrochem Soc	HCA
Barisci, J	2003	150	E409	J Electrochem Soc	HCA
Baughman, R	1999	284	1340	Science	HCA
Britto, P	1996	41	121	Bioelectrochem Bioen	HCA
Campbell, J	1999	121	3779	J Am Chem Soc	HCA
Che, G	1998	393	346	Nature	HCA
Gao, M				Electroanalysis, in	
Gerisher, H	1987	91	1930	J Phys Chem	
Hagiwara, R	2000	105	221	J Fluorine Chem	HCA
Kastening, B	1997	42	2789	Electrochim Acta	HCA
Kastening, B	1994	374	159	J Electroanal Chem	HCA
Kinoshita, K	1998			Carbon: Electrochemi	
Lao, H	2001	73	915	Anal Chem	
Li, J	2002	106	9299	J Phys Chem B	HCA
McEwen, A	1997	144	L84	J Electrochem Soc	HCA
McEwen, A	1999	146	1687	J Electrochem Soc	HCA
Minett, A	2002	2	61	Curr App Phys	
Niu, C	1997	70	1480	Appl Phys Lett	HCA
Nugent, J	2001	1	87	NanoLett	HCA
Papageorgiou, N	1996	143	3099	J Electrochem Soc	HCA
Randin, J	1972	36	257	J Electroanal Chem	HCA
Stenger-Smith, J	2002	149	A973	J Electrochem Soc	HCA

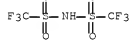
Suarez, P	1997	16	2533	Electrochim Acta	
Sun, J	1998	102	8858	J Phys Chem B	HCA
Wang, J	2002	74	1993	Anal Chem	HCA

OS.CITING REF COUNT: 106 THERE ARE 106 CAPLUS RECORDS THAT CITE THIS RECORD (106 CITINGS)

L87 ANSWER 3 OF 4 HCA COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 139:294470 HCA Full-text
TITLE: N-Methyl-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li battery
AUTHOR(S): Sakaebe, Hikari; Matsumoto, Hajime
CORPORATE SOURCE: Special Division of Green Life Technology, National Institute of Advanced Industrial Science and Technology (AIST), Ikeda, Osaka, 563-8577, Japan
SOURCE: Electrochemistry Communications (2003), 5(7), 594-598
CODEN: ECCMF9; ISSN: 1388-2481
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A few room temperature ionic liqs. containing quaternary ammonium cation and imide anion were prepared and electrochem. evaluated and compared to the conventional room temperature ionic liquid system with 1-ethyl-3-methylimidazolium cation. Ability for use as an electrolyte base of s lithium battery system was totally explained with the cathodic stability of the salt, however, other properties might also affect this ability. Among the salts studied here, N-methyl-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide is the most promising candidate as the electrolyte base. Li/LiCoO2 cell containing the salt showed very good performance with a consistent capacity of LiCoO2 and the Coulombic efficiency at entire cycles of >97% at C/10 current rate. When cycled at higher rate (C/2), 85% of the discharge capacity was still retained.

IT 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
RN 90076-65-6 HCA
CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt (1:1) (CA INDEX NAME)



IT 223437-05-6P
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
RN 223437-05-6 HCA
CN Pyrrolidinium, 1-methyl-1-propyl-, salt with

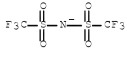
1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (CA INDEX NAME)

CM 1

CRN 108259-90-1
CMF C8 H18 N

CM 2

CRN 98837-98-0
CMF C2 F6 N O4 S2



IT 608140-09-6P, N-Methyl-N-propylpyrrolidinium bromide (P13; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
RN 608140-09-6 HCA
CN Pyrrolidinium, 1-methyl-1-propyl-, bromide (1:1) (CA INDEX NAME)

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
ST dialkyl piperidinium trifluoromethanesulfonyl imide pyrrolidinium quaternary ammonium electrolyte battery; lithium secondary batter electrolyte ionic liq
LiTFSI quaternary ammonium
IT Battery electrolytes
Ionic conductivity
Ionic liquids
Linear-sweep voltammetry
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide

(PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT Carbon black, uses
(composite with LiCoO2 and KF 1120; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT Fluoropolymers, uses
(composite with acetylene black and LiCoO2; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT Electrodes
(glassy carbon; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT Current density
(limiting; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT Secondary batteries
(lithium; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT Electric energy
(specific and discharge capacity curves; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-06-4, Platinum, uses 174899-82-2, 1H-Imidazolium, 1-ethyl-3-methyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1)
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 223437-05-6P 268536-05-6P 608140-12-1P, N-Methyl-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 106-94-5, Propyl bromide
(N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 120-94-5, 1-Methylpyrrolidine
(P13 precursor; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 608140-09-6P, N-Methyl-N-propylpyrrolidinium bromide
(P13; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 626-67-5, N-Methylpiperidine
(PP13 precursor; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

IT 88840-42-0P
(PP13; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
IT 75-50-3, Trimethylamine, reactions
(TMPA precursor; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
IT 2650-50-2P
(TMPA; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
(composite with acetylene black and KF 1120; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)
IT 24937-79-9, KF 1120
(composite with acetylene black and LiCoO2; N-Me-N-propylpiperidinium bis(trifluoromethanesulfonyl)imide (PP13-TFSI) - novel electrolyte base for Li secondary battery)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	File
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Caja, J	2000		150	Molten Salts XII	HCA
Fuller, J	1997	144	3881	J Electrochem Soc	HCA
Fung, Y	1999	81	891	J Power Sources	
Koch, V	1996	143	798	J Electrochem Soc	HCA
MacFarlane, D	1999	103	4164	J Phys Chem B	HCA
Matsuda, T	2002	70	446	Electrochemistry	HCA
Matsumoto, H	2000		922	Chem Lett	HCA
Matsumoto, H				J Electrochem Soc, s	
Matsumoto, H	2000		186	Molten salts XII	HCA
Nagaura, T	1991	9	209	Prog Batt Solar Cell	
Papageourgiou, N	1996	143	3099	J Electrochem Soc	

OS.CITING REF COUNT: 273 THERE ARE 273 CAPLUS RECORDS THAT CITE THIS RECORD (278 CITINGS)

L87 ANSWER 4 OF 4 HCA COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 138:408292 HCA Full-text
TITLE: Electrochemical process for producing ionic liquids
INVENTOR(S): Moulton, Roger
PATENT ASSIGNEE(S): Sachem, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030094380	A1	20030522	US 2001-990651	

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US 6991718 B2 20060131
CA 2467461 A1 20030605 CA 2002-2467461

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200211
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002365547 A1 20030610 AU 2002-365547

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IN 2004CN01109 A 20060203 IN 2004-CN1109

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PRIORITY APPLN. INFO.: US 2001-990651 A
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WO 2002-US36907 W
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates to an electrochem. process for producing ionic liqs. The ionic liqs. may be hydrophilic or hydrophobic ionic liqs. The ionic liqs. are made by subjecting an electrochem. cell to electrolysis.

IT 327022-59-3, N-Methyl-N-propylpyrrolidinium tetrafuoroborate
(electrochem. process for producing ionic liqs
.)

RN 327022-59-3 HCA

CN Pyrrolidinium, 1-methyl-1-propyl-, tetrafluoroborate(1-) (1:1) (CA INDEX NAME)

CM 1

CRN 108259-90-1
CMF C8 H18 N

CM 2

CRN 14874-70-5
CMF B F4
CCI CCS

IT 16872-11-0, Tetrafluoroboric acid 528818-82-8, N-Methyl-N-propylpyrrolidinium chloride
(use in electrochem. process for producing ionic liqs.)

RN 16872-11-0 HCA

CN Borate(1-), tetrafluoro-, hydrogen (1:1) (CA INDEX NAME)

RN 528818-82-8 HCA
CN Pyrrolidinium, 1-methyl-1-propyl-, chloride (1:1) (CA INDEX NAME)

INCL 205431000; X20-555.1; X20-453.7; X20-453.8
IPCI C25B0003-00 [I,A]
IPCR B01D0061-42 [I,C*]; B01D0061-44 [I,A]; C25B0001-00 [I,C*]; C25B0001-00 [I,A]; C25B0003-00 [I,C*]; C25B0003-00 [I,A]
NCL 205/431.000; 204/537.000; 204/538.000; 205/551.000; 205/413.000; 205/444.000
CC 72-9 (Electrochemistry)
Section cross-reference(s): 28, 48
ST electrochem producing ionic liq
IT Membranes, nonbiological
(bipolar; electrochem. process for producing ionic liqs. using)
IT Anodes
(dimensionally stable anodes; electrochem. process for producing ionic liqs. in electrolyzer with)
IT Ionic liquids
(electrochem. process for producing)
IT Electrolysis
(electrochem. process for producing ionic liqs.)
IT Anion exchange membranes
Cation exchange membranes
(electrochem. process for producing ionic liqs. using)
IT 12645-46-4, Iridium oxide
(anode in electrolyzer electrochem. process for producing ionic liqs.)
IT 7440-02-0, Nickel, uses
(cathode in electrolyzer in electrochem. process for producing ionic liqs.)
IT 7580-37-2, Tetrakis(hydroxymethyl)phosphonium acetate 179075-88-8, 1-Butyl-3-methylimidazolium nitrate 284049-75-8, 1-Butyl-3-methylimidazolium acetate 327022-59-3,

N-Methyl-N-propylpyrrolidinium tetrafuoroborate 478935-31-8, 1-Butyl-3-methylimidazolium dihydrogenphosphate 528818-84-0 528818-85-1
(electrochem. process for producing ionic liqs .)

IT 203389-24-6, 1-Butylpyridinium nitrate 497144-87-3, 1-Butyl-3-methylimidazolium formate
(electrochem. process for producing ionic liqs .)

IT 66796-30-3, Nafion 117 100754-08-3, Nafion 902
(electrochem. process for producing ionic liqs . using)

IT 64-19-7, Acetic acid, reactions 124-38-9, Carbon dioxide, reactions 124-64-1, Tetrakis(hydroxymethyl)phosphonium chloride 1124-64-7, n-Butylpyridinium chloride 1310-73-2, Sodium hydroxide, reactions 7631-99-4, Sodium nitrate, reactions 7647-01-0, Hydrochloric acid, reactions 7664-38-2, Phosphoric acid, reactions 7697-37-2, Nitric acid, reactions 16872-11-0, Tetrafluoroboric acid 79917-90-1, 1-Butyl-3-methylimidazolium chloride 507468-58-8 528818-81-7, 1-Butyl-3-methylimidazolium hydroxide 528818-82-8, N-Methyl-N-propylpyrrolidinium chloride
(use in electrochem. process for producing ionic liqs.)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	File
Anon					
Anon					
Anon	1995			WO 9521871	HCA
Anon	1995			WO 9521872	HCA
Anon	1998			WO 9806106	HCA
Anon	1999			WO 9914160	HCA
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Holbrey	1999	1	223	Clean Products and P	
Koch	1998			US 5827602 A	HCA
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Seddon				Room-Temperature Ion	
Shimizu	1986			US 4572769 A	HCA
Shiono	1999			US 5870275 A	HCA

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)